Sheet 1-2 Sheets.

H. Halvorson.

Weaving Hair Cloth.

No. 10,044. Patented Sep. 27, 1853.

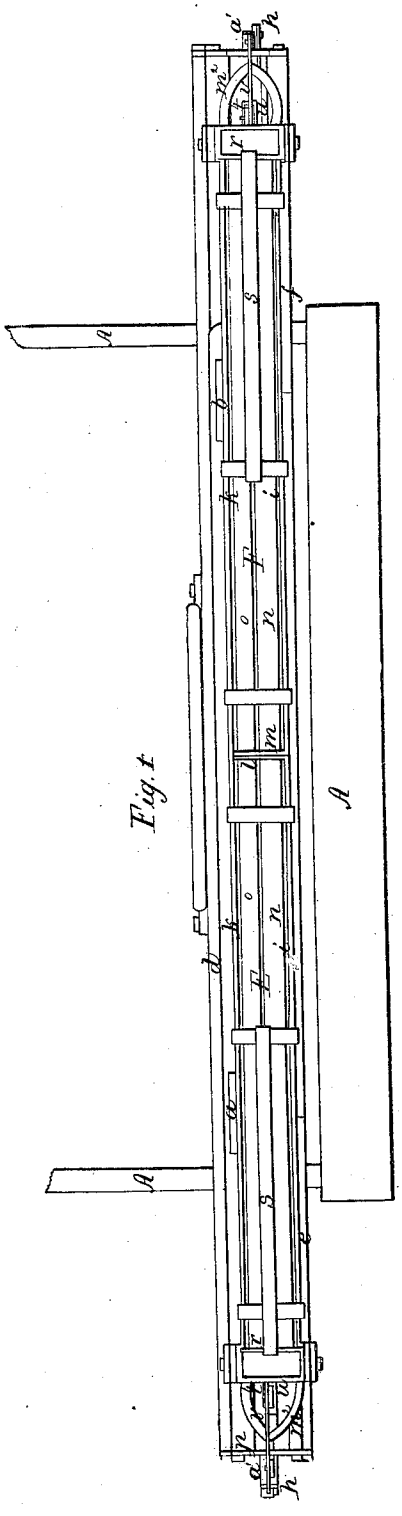


Fig. 1

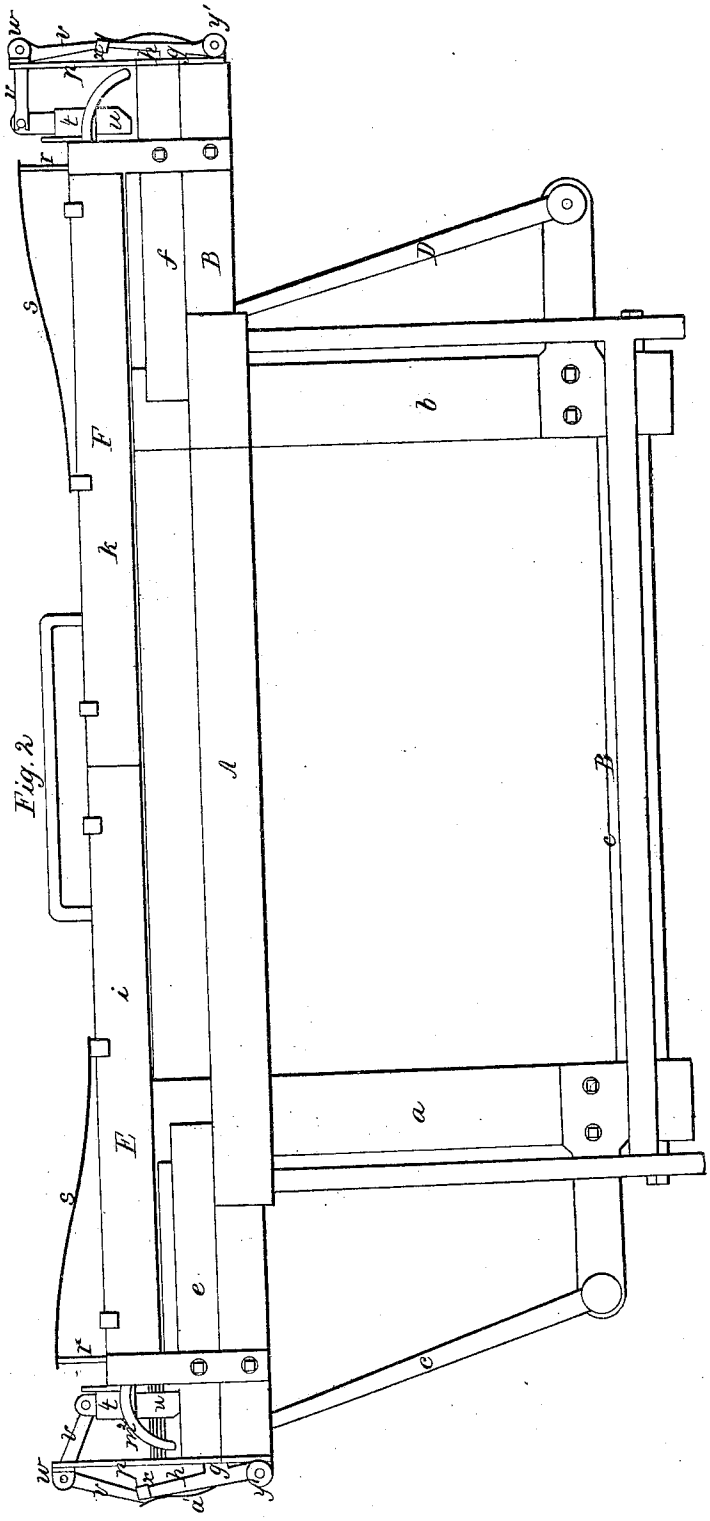


Fig. 2

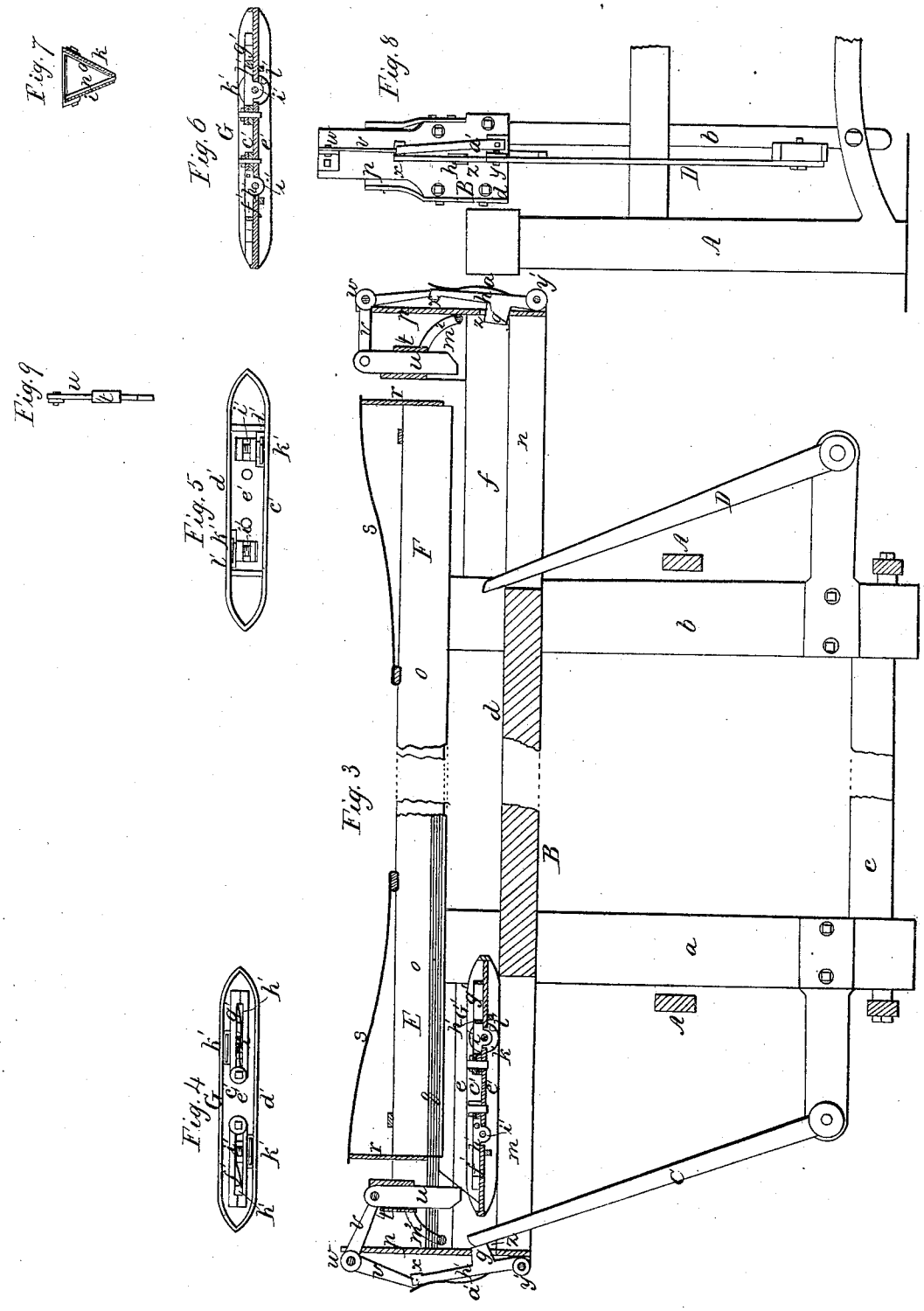
N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

Sheet 2-2 Sheets.

H. Halvorson.

Weaving Hair Cloth.

No. 10,044. Patented Sep. 27, 1853.



UNITED STATES PATENT OFFICE.

HALVOR HALVORSON, OF HARTFORD, CONNECTICUT.

LOOM FOR WEAVING HAIRCLOTH.

Specification of Letters Patent No. 10,044, dated September 27, 1853.

To all whom it may concern:

Be it known that I, HALVOR HALVORSON, of Hartford, in the county of Hartford and State of Connecticut, have invented a new or improved loom for weaving haircloth or various other fabrics whose filling or weft threads can be advantageously introduced into or between the warps by such machine; and I do hereby declare that the same is described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes a top view of a loom frame and its lay and my improvements as applied to the latter. Fig. 2 is a front elevation of it. Fig. 3 is a vertical, central, and longitudinal section of the lay and its attached mechanism together with the shuttle. Fig. 4 is a top view of the shuttle. Fig. 5 is an underside view of it. Fig. 6 is a vertical, central, and longitudinal section of it. Fig. 7 is a cross section of one of the hair troughs.

In the said drawings A represents the loom frame with no mechanism applied to it except the lay, to the latter only of which my improvement is directly connected. B is the lay composed of the swords *a*, *b*, their connecting bar *c*, the race beam *d*, and the two shuttle boxes *e*, *f*, the whole being made in the usual manner. C, D, are the picker staves that are connected to the lay, and extend up into and work in the shuttle boxes so as to throw the shuttle, no pickers in this case being used separately from the staves. Each of the said staves is to be operated so as to impel the shuttle across the race beam and into the opposite shuttle box, and immediately afterward return to its position against the projection *g* from a lever *h* applied to the outer end of the shuttle box as seen in the drawings.

Over the race beam are two troughs E, F, which abut together and extend each way from the middle of the loom, and parallel to the race beam as seen in the drawings. Each of these troughs is formed of two plates *i*, *k*, that are made to extend upward at an acute angle to one another, and united together by end pieces *l*, *m*. They are not connected together at the vertex of their angle of departure from one another, but are lined on their inner surfaces with india rubber or india rubber cloth as seen at *n*, *o*, the contiguous inner surfaces of the cloth being brought in contact or nearly so at their lower edges.

The lower part of the outer end of each of the troughs is made open so that a bunch of hairs when placed in either trough may be made to extend through the outer end of the said trough and toward the upright *p* that is at the outer end of the shuttle box that is immediately beneath, all as seen in Fig. 3 wherein the bunch of hair is denoted at *q* by red lines. The bunch just before it leaves the outer end of the trough is compressed or compacted by a presser or slide *r* that is arranged and applied to each trough as seen in the drawings, and is pressed down by the action of a spring *s*.

To the outer end of each trough is applied what may be termed the depresser, which consists of a thin plate of metal *u*, that is made to slide freely up and down through a projection *t* attached to the end of the trough. This plate *u* is jointed to one arm of a bent lever *v* that works in a vertical plane and on a fulcrum *w*. The lower arm of this lever rests against a projection *x* extended from the upper end of a lever *h* as seen in Fig. 2, and in Fig. 8 which is an end view of the lay. The lever *h* works on a fulcrum *y*, and has a projection *g* extended from it through a slot *z* made in the end of the shuttle box. A spring *a'* is fastened at its lower end to the end of the lay and at its upper end it is made to bear against the lower arm of the lever *v* as seen in the drawings.

The shuttle G is made of two upright plates *c'*, *d'*, united together by a horizontal plate *e'*, and formed as represented in the drawings. On the top of the plate *e'* there are two sets *f'*, *g'*, of pincers. Each set consists of two jaw bars hinged together and having a spring *h'* between them to press them asunder, the spring being attached at one end to one of the jaw bars and made to bear at its other end against the other jaw bar. Each set of pincers has a closing screw *i'* on which there is a small wheel *k'* which has a notch *l'* made in its periphery. In each shuttle box there is a small stud or tooth *m* or *n* that is so arranged that when the shuttle is in the act of entering the box or being thrown into it, the side of the notch of the next adjacent wheel *k'* may strike against the tooth *m'* or *n'* and cause the wheel to turn so as to allow its pincers to open. When the shuttle is moved in the op-

posite direction the other side of the notch coming in contact with the said tooth will cause a rotation of the wheel in an opposite direction so as to effect the closing of the jaws of the pincers.

The outer end of each bunch or mass of hair may be supported on a bent wire m^2 extended under it and from the end of the trough in which the said bunch may rest. The lower end of the depresser slide u may be hollowed or grooved out to receive a hair as seen in side view in Fig. 9, such depresser slide being made of a width which, when it is passed or forced down through the mass of hairs shall cause it to press downward below the mass one hair or such a number of them as it may be desirable to introduce into the shed or decussation of the warps, at or during the next throw of the shuttle.

When the shuttle is thrown against a picker it presses the picker back against the projection g of the lever h, and thereby creates a depression of the depresser slide sufficient to cause it to pass down through the mass of hairs and force one of them or more of them, as circumstances may require, down in between the jaws of the open pincers of the shuttle. At and during the next throw of the shuttle the jaws will be closed on the said hair or hairs, and the shuttle will draw it or them out of the mass and through the opening at the bottom of the trough, thereby reversing the hair when it passes into the shed of the warps. The trough may be made to stand in an opposite direction so that the shuttle will take the hair out of the mass without reversing it, but in such case it will readily be seen that the trough would project at a very inconvenient distance outward beyond the end of the lay, and take up much more room than it does under my arrangement of it.

What I claim as my invention is—

1. The combination of the trough or troughs, one or two depressers, one or two sets of pincers applied to the shuttle, and mechanism for opening and closing the pincers, the whole being applied to one or both ends of the lay, and to the shuttle, and made to operate together substantially in the manner and for the purpose of carrying hair or hairs or like matters into the shed of warps as specified.

2. And I also claim the arrangement of each or both troughs with respect to the depresser or depressers thereof and to the shuttle boxes and the lay, substantially as represented in the drawings, the trough in such arrangement being made to extend from the depresser toward the middle of the lay, substantially as specified.

In testimony whereof I have hereto set my signature, this twenty first day of July A. D. 1852.

HALVOR HALVORSON.

Witnesses:

R. H. Eddy,

Wm. Holbrook.